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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _05 January 2007_.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-31_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-31_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _16 September 2006_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Drawings

1.   Figure 1 should be designated by a legend such as --Prior Art-- because only

that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in

compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid

abandonment of the application. The replacement sheet(s) should be labeled

"Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct

any portion of the drawing figures. If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required corrective action in the next Office

action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

3.   **Claims 4-5, 13** are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. Regarding **claims 4-5, 13**, the phrase "such as"

renders the claim indefinite because it is unclear whether the limitations following the

phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5.   **Claims 1-3, 6-12, 14-16, 20-23, 28-31** are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Publication No. 2003/0202469 A1 to *Cain*.

As to **claim 1**, *Cain* discloses a data network comprising a provider node, a receiver node, and a plurality of intermediate nodes (fig. 1, para. 0031, source 1, destination 4, intermediates 2, 3, 5), the provider node being arranged to provide data to at least one of said intermediate nodes or to the receiver node, said intermediate nodes being arranged to receive data and forward data to at least one other intermediate node or to the receiver node, and the receiver node being arranged to receive data from at least one intermediate node or from the provider node (para. 0031-0033, data received at intermediate nodes, sent to destination node); wherein:

said data comprises at least a part which relates to a path characterisation metric (para. 0031, sending RREQQ from node 1 which includes QoS link metric);

said provider node is arranged to assign an initial condition to the path characterisation metric in respect of data provided by it (para. 0031, QoS parameter is requested);

said intermediate nodes are arranged to update the condition of the path characterisation metric in respect of data they forward (para. 0032, intermediate node can update QoS link metric);

said receiver node is arranged to make available for the provider node information indicative of a discrepancy between the condition of the path characterisation metric in respect of data received by it and a predetermined target

condition for the path characterisation metric (para. 0033, destination node generates reply RREPQ to source node 1 including flow identifier and updated QoS link metric for each discovered route);

and wherein said provider node is arranged to assign a different initial condition to the path characterisation metric in respect of subsequent data provided by it in the event that it receives information indicative of such a discrepancy from said receiver node (para. 0033, upon receiving RREPQ, the source node 1 generates QoS route metrics based upon updated QoS link metrics).

As to claim 2, *Cain* further discloses a data network according to claim 1, wherein the condition of the path characterisation metric at a node is indicative of a measure of congestion expected to be experienced by data on a path downstream of that node (para. 0031, QoS parameter is based upon end-to-end delay, end-to-end delay variation, expected path durability).

As to claim 3, *Cain* further discloses a data network according to claim 1, wherein the condition assigned to the path characterisation metric is a value, and the predetermined target condition is a value (para. 0031, QoS parameter is based upon end-to-end delay, end-to-end delay variation, expected path durability, i.e. these are values, hence both the initial metric (predetermined target condition) and the updated metric (path characterisation metric) are values).

As to claim 6, *Cain* further discloses a data network according to claim 1, wherein an intermediate node is arranged to update the condition of the path characterisation metric in response to a path characteristic associated with that node (para. 0032, if an

intermediate node can support the QoS parameter of a particular request RREQQ, the node updates the QoS link metric).

As to claim 7, *Cain* further discloses a data network according to claim 6, wherein said path characteristic relates to a measure of congestion on a path associated with that node (para. 0031, QoS parameter is based upon end-to-end delay, end-to-end delay variation, expected path durability).

As to claim 8, *Cain* further discloses a data network according to claim 6 wherein said path characteristic relates to a measure of congestion on a path downstream of that node (para. 0031, QoS parameter is based upon end-to-end delay, end-to-end delay variation, expected path durability).

As to **claim 9**, *Cain* discloses a method for assigning path characterisation metrics to data in a data network comprising a provider node, a receiver node, and a plurality of intermediate nodes (fig. 1, para. 0031, source 1, destination 4, intermediates 2, 3, 5), the provider node being arranged to provide data to at least one of said intermediate nodes or to the receiver node, said data comprising at least a part which relates to a path characterisation metric, said intermediate nodes being arranged to receive data and forward data to at least one other intermediate node or to the receiver node, and the receiver node being arranged to receive data from at least one intermediate node or from the provider node (para. 0031-0033, data received at intermediate nodes, sent to destination node); the method comprising steps of:

assigning an initial condition to the path characterisation metric in respect of data provided by the provider node (para. 0031, QoS parameter is requested);

updating the condition of the path characterisation metric in respect of data
forwarded by said intermediate nodes (para. 0032, intermediate node can update QoS
link metric);

monitoring a final condition of the path characterisation metric in respect of data
received by the receiver node, and determining a measure indicative of a discrepancy
between said final condition and a predetermined target condition for the path
characterisation metric (para. 0033, destination node generates reply RREPQ to source
node 1 including flow identifier and updated QoS link metric for each discovered route);

and assigning a different initial condition to the path characterisation metric in
respect of subsequent data provided by the provider node in the event that said
measure indicates such a discrepancy in respect of previous data (para. 0033, upon
receiving RREPQ, the source node 1 generates QoS route metrics based upon updated
QoS link metrics).

As to claim 10, *Cain* further discloses a method according to claim 9, wherein the
condition assigned to the path characterisation metric is a value, and the predetermined
target condition is a value (para. 0031, QoS parameter is based upon end-to-end delay,
end-to-end delay variation, expected path durability, i.e. these are values, hence both
the initial metric (predetermined target condition) and the updated metric (path
characterisation metric) are values).

As to **claim 11**, *Cain* discloses a feedback node for enabling an initial condition
to be assigned to a path characterisation metric in respect of data to be forwarded
through a data network (para. 0031-0033, receiver node sends reply back to request

node (feedback node) that includes flow identifier and updated QoS metric, feedback

node then generates QoS route metrics based on reply), said data network comprising

a provider node, a receiver node and a plurality of intermediate nodes, said data

comprising at least a part which relates to a path characterisation metric (fig. 1, para.

0031, source 1, destination 4, intermediates 2, 3, 5, QoS parameter); said provider node

being arranged to assign an initial condition to the path characterisation metric in

respect of data, and to provide said data to at least one of said intermediate nodes or to

the receiver node (paras. 0031-0033, requested QoS parameter by sending node, sent

to intermediates then to receiver); said intermediate nodes being arranged to receive

data from said provider node or from one or more other intermediate nodes, to update a

condition of the path characterisation metric in respect of data received by them, and to

forward data to at least one other intermediate node or to the receiver node (para. 0032,

updating QoS link metric); and said receiver node being arranged to receive data from

at least one intermediate node or from the provider node, and to make available for the

feedback node information relating to the path characterisation metric in respect of data

received by it (para. 0031-0033, receiver node sends reply back to request node

(feedback node) that includes flow identifier and updated QoS metric);

wherein the feedback node is arranged to enable a different initial condition to be

assigned to the path characterisation metric in respect of subsequent data provided by

the provider node in the event that said feedback node receives information indicative of

a discrepancy between a predetermined target condition for the path characterisation

metric and the condition of the path characterisation metric in respect of previous data

received by said receiver node (para. 0033, destination node generates reply RREPQ to source node 1 including flow identifier and updated QoS link metric for each discovered route, para. 0033, upon receiving RREPQ, the source node 1 generates QoS route metrics based upon updated QoS link metrics).

As to claim 12, *Cain* further discloses a feedback node according to claim 11, wherein the condition assigned to the path characterisation metric is a value, and the predetermined target condition is a value (para. 0031, QoS parameter is based upon end-to-end delay, end-to-end delay variation, expected path durability, i.e. these are values, hence both the initial metric (predetermined target condition) and the updated metric (path characterisation metric) are values).

As to claim 14, *Cain* further discloses a feedback node according to claim 11, said feedback node also serving as said provider node in said network (para. 0031-0033, receiver node sends reply back to request node (feedback node) that includes flow identifier and updated QoS metric).

As to claim 15, *Cain* further discloses a feedback node according to claim 14, said feedback node being arranged to assign a different initial condition to the path characterisation metric in respect of subsequent data in the event that it receives, from said receiver node, a measure of a discrepancy between said predetermined target condition for the path characterisation metric and the condition of the path characterisation metric in respect of previous data received by said receiver node (para. 0033, destination node generates reply RREPQ to source node 1 including flow identifier and updated QoS link metric for each discovered route, para. 0033, upon

receiving RREPQ, the source node 1 generates QoS route metrics based upon updated QoS link metrics).

As to claim 16, *Cain* further discloses a feedback node according to claim 14, said feedback node being arranged to assign a different initial condition to the path characterisation metric in respect of subsequent data in the event that it receives, from said receiver node, information indicative of the condition of the path characterisation metric in respect of previous data received by said receiver node, and determines that there is a discrepancy between said condition of the path characterisation metric and said predetermined target condition for the path characterisation metric (para. 0033, destination node generates reply RREPQ to source node 1 including flow identifier and updated QoS link metric for each discovered route, para. 0033, upon receiving RREPQ, the source node 1 generates QoS route metrics based upon updated QoS link metrics).

As to **claim 20**, *Cain* discloses a method of providing data in a data network comprising a provider node, a receiver node and a plurality of intermediate nodes, the provider node being arranged to provide data to at least one of said intermediate nodes or to the receiver node, said data comprising at least a part which relates to a path characterisation metric (fig. 1, para. 0031, source 1, destination 4, intermediates 2, 3, 5, QoS parameter); said intermediate nodes being arranged to receive data from said provider node or from one or more other intermediate nodes, to update a condition of the path characterisation metric in respect of data received by them, and to forward data to at least one other intermediate node or to the receiver node (para. 0032, updating QoS link metric, paras. 0031-0033, data sent from source to intermediates to

destination); and said receiver node being arranged to receive data from at least one

intermediate node or from the provider node, and to make available for the provider

node information indicative of a discrepancy between an eventual condition of the path

characterisation metric in respect of data received by it and a predetermined target

condition for the path characterisation metric (para. 0033, destination node generates

reply RREPQ to source node 1 including flow identifier and updated QoS link metric for

each discovered route); the method comprising the steps of:

assigning an initial condition to the path characterisation metric in respect of data

(para. 0031, QoS parameter is requested);

providing said data to at least one of said intermediate nodes (para. 0032,

intermediate node can update QoS link metric);

receiving information relating to said eventual condition of the path

characterisation metric in respect of previously-provided data received by said receiver

node (para. 0031-0033, reply RREPQ contains updated QoS link metric);

and assigning a different initial condition to the path characterisation metric in

respect of subsequent data in the event of receipt of information indicative of a

discrepancy between said eventual condition of the path characterisation metric and a

predetermined target condition for the path characterisation metric (para. 0033, upon

receiving RREPQ, the source node 1 generates QoS route metrics based upon updated

QoS link metrics).

As to claim 21, *Cain* further discloses a method according to claim 20, wherein

the condition assigned to the path characterisation metric is a value, and the

predetermined target condition is a value (para. 0031, QoS parameter is based upon

end-to-end delay, end-to-end delay variation, expected path durability, i.e. these are

values, hence both the initial metric (predetermined target condition) and the updated

metric (path characterisation metric) are values).

As to claim 22, *Cain* further discloses a method according to claim 20, said

receiver node being arranged to make available for the provider node a measure of a

discrepancy between said predetermined target condition for the path characterisation

metric and said eventual condition of the path characterisation metric in respect of

previous data received, whereby to enable said provider node to assign a different initial

condition to the path characterisation metric in respect of subsequent data (para. 0033,

upon receiving RREPQ, the source node 1 generates QoS route metrics based upon

updated QoS link metrics).

As to claim 23, *Cain* further discloses a method according to claim 20, said

receiver node being arranged to make available for the provider node information

indicative of the condition of said eventual path characterisation metric in respect of

previously received data, whereby to enable said provider node to assign a different

initial condition to the path characterisation metric in respect of subsequent data in the

event that said provider node determines that there is a discrepancy between said

condition of the path characterisation metric and said predetermined target condition for

the path characterisation metric (para. 0033, upon receiving RREPQ, the source node 1

generates QoS route metrics based upon updated QoS link metrics).

As to **claim 28**, *Cain* discloses a path characterisation system for providing path characterisation information in association with a data network, said data network comprising a plurality of nodes including a provider node, a receiver node, and at least one intermediate node, the provider node being arranged to provide data to at least one intermediate node or to the receiver node, an intermediate node being arranged to receive data and to forward data to at least one other intermediate node or to the receiver node, and the receiver node being arranged to receive data from the provider node or from at least one intermediate node (fig. 1, para. 0031, source 1, destination 4, intermediates 2, 3, 5, QoS parameter); the path characterisation system comprising:

a path characterisation metric condition assigning means, associated with the provider node, arranged to assign an initial condition to a path characterisation metric in the event that said provider node provides data (para. 0031, QoS parameter is requested);

a path characterisation metric updating means, associated with an intermediate node, arranged to update the condition of the path characterisation metric in the event that said node receives data (para. 0032, intermediate node can update QoS link metric);

and a path characterisation metric feedback means, associated with the receiver node, arranged to determine an eventual condition of the path characterisation metric in the event that said receiver node receives said data, and to make available for the path characterisation metric condition assigning means information indicative of a discrepancy between the eventual condition of the path characterisation metric and a

predetermined target condition for the path characterisation metric (para. 0031-0033,

reply RREPQ contains updated QoS link metric);

wherein said path characterisation metric condition assigning means is arranged

to assign a different initial condition to a path characterisation metric associated with

subsequent data in the event that feedback is made available indicative of such a

discrepancy between the eventual condition of the path characterisation metric and the

predetermined target condition in relation to a previous path characterisation metric

(para. 0033, upon receiving RREPQ, the source node 1 generates QoS route metrics

based upon updated QoS link metrics).

As to claim 29, *Cain* further discloses a path characterisation system according

to claim 28, wherein the condition assigned to the path characterisation metric is a

value, and the predetermined target condition is a value (para. 0031, QoS parameter is

based upon end-to-end delay, end-to-end delay variation, expected path durability, i.e.

these are values, hence both the initial metric (predetermined target condition) and the

updated metric (path characterisation metric) are values).

As to **claim 30**, *Cain* discloses a path characterisation system for providing path

characterisation information in association with a data network, said data network

comprising a plurality of nodes including a provider node, a receiver node, and at least

one intermediate node, the provider node being arranged to provide data to at least one

intermediate node or to the receiver node, an intermediate node being arranged to

receive data and to forward data to at least one other intermediate node or to the

receiver node, and the receiver node being arranged to receive data from the provider

node or from at least one intermediate node (fig. 1, para. 0031, source 1, destination 4, intermediates 2, 3, 5, QoS parameter); the path characterisation system comprising:

a path characterisation metric condition assigning means, associated with the provider node, arranged to assign a path characterisation metric with an initial condition in the event that said provider node provides data, said path characterisation metric being associated with said data (para. 0031, QoS parameter is requested);

a path characterisation metric updating means, associated with a node capable of receiving data, arranged to update the condition of the path characterisation metric in the event that said node receives data (para. 0032, intermediate node can update QoS link metric);

and a path characterisation metric feedback means, associated with the receiver node, arranged to determine an eventual condition of the path characterisation metric in the event that said receiver node receives said data, and to make available for the path characterisation metric condition assigning means information relating to the eventual condition of the path characterisation metric (para. 0031-0033, reply RREPQ contains updated QoS link metric);

wherein said path characterisation metric condition assigning means is arranged to provide information relating to the eventual condition of the path characterisation metric associated with previous data in the event that feedback is made available indicative of such a discrepancy between the eventual condition of the path characterisation metric and the predetermined target condition in relation to a previous

path characterisation metric (para. 0033, upon receiving RREPQ, the source node 1

generates QoS route metrics based upon updated QoS link metrics).

As to claim 31, *Cain* further discloses a path characterisation system according

to claim 30, wherein the condition assigned to the path characterisation metric is a

value, and the predetermined target condition is a value (para. 0031, QoS parameter is

based upon end-to-end delay, end-to-end delay variation, expected path durability, i.e.

these are values, hence both the initial metric (predetermined target condition) and the

updated metric (path characterisation metric) are values).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

7.   **Claims 4-5, 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over

U.S. Publication No. 2003/0202469 A1 to *Cain* in view of U.S. Patent No. 7,433,311 B1

to *Kalyanasundaram et al.* ("*Kal*").

As to claim 4, *Cain* further discloses a data network according to claim 1, wherein

in the event that said provider node assigns a different initial condition to the path

characterisation metric in respect of subsequent data provided by it, said different initial

condition is assigned such as to comply with receiver replies RREPQ in respect of said

subsequent data received by said receiver node (para. 0033, fig. 4, updating QoS and

sending out CONFQ messages to the receiver).

Cain does not expressly discloses a data network according to claim 1, wherein in the event that said provider node assigns a different initial condition to the path characterisation metric in respect of subsequent data provided by it, said different initial condition is assigned such *as to decrease a corresponding discrepancy* in respect of said subsequent data received by said receiver node.

Kal discloses calculating a new value for a current resource setting that more closely approximates a value of an actual resource setting of the resource of the communications channel (fig. 2, item 202-2). Furthermore, this is performed by a client (provider) device (col. 14, lines 15-19) and the new value is sent to a network resource allocator (receiver) (fig. 2, item 202-3), i.e. discrepancy between the two values is decreased and this is sent to the receiver from the provider. Moreover, the reason for calculating a new value is based upon a detection of a negotiation event (col. 16, lines 14-16).

Cain and *Kal* are analogous art because they are from the same field of endeavor regarding data processing.

At the time of invention, it would have been obvious to a person of ordinary skill in the art to incorporate the approximating a new value of a resource setting as taught by Kal into the invention of Cain. The suggestion/motivation would have been to adjust allocation of a resource in a data communications channel (Kal, col. 9, lines 10-13).

As to claim 5, *Cain and Kal* further disclose a data network according to claim 4, wherein said different initial condition is assigned such as to maximise the possibility that said corresponding discrepancy in respect of said subsequent data received by

said receiver node will be zero (Kal, fig. 2, item 202-2, 202-3, more closely

approximating a value, which pertains to having zero discrepancy). In addition, the

same suggestion/motivation of claim 4 applies.

As to claim 13, see similar rejection for claim 4. The method teaches the node.

8.   **Claims 17-19** rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Publication No. 2003/0202469 A1 to *Cain* in view of U.S. Patent No. 6,633,538 B1 to

Tanaka et al. ("*Tanaka*").

As to claim 17, *Cain* does not expressly disclose a feedback node according to

claim 11, said feedback node also serving as said receiver node in said network.

Tanaka discloses duplicating the resource of the master node to each slave node

and the master node representing the functions of each slave node while duplicating

(abstract), i.e. a node (feedback) also can function as another node (receiver).

Cain and *Tanaka* are analogous art because they are from the same field of

endeavor regarding data processing.

At the time of invention, it would have been obvious to a person of ordinary skill

in the art to incorporate the duplication process as taught by Tanaka into the invention

of Cain. The suggestion/motivation would have been to represent the functions of a

node stopped (Tanaka, col. 1, lines 7-11).

As to claim 18, *Cain* and *Tanaka* further disclose a feedback node according to

claim 17, said feedback node being arranged to make available for the provider node a

measure of a discrepancy between said predetermined target condition for the path

characterisation metric and the condition of the path characterisation metric in respect

of previous data received by said receiver node, whereby to enable said provider node

to assign a different initial condition to the path characterisation metric in respect of

subsequent data (Cain, para. 0033, destination node generates reply RREPQ to source

node 1 including flow identifier and updated QoS link metric for each discovered route,

para. 0033, upon receiving RREPQ, the source node 1 generates QoS route metrics

based upon updated QoS link metrics). In addition, the same suggestion/motivation of

claim 17 applies.

As to claim 19, *Cain* and *Tanaka* further disclose a feedback node according to

claim 17, said feedback node being arranged to make available for the provider node

information indicative of the condition of the path characterisation metric in respect of

previous data received by said receiver node, whereby to enable said provider node to

assign a different initial condition to the path characterisation metric in respect of

subsequent data in the event that said provider node determines that there is a

discrepancy between said condition of the path characterisation metric and said

predetermined target condition for the path characterisation metric (Cain, para. 0033,

destination node generates reply RREPQ to source node 1 including flow identifier and

updated QoS link metric for each discovered route, para. 0033, upon receiving RREPQ,

the source node 1 generates QoS route metrics based upon updated QoS link metrics).

In addition, the same suggestion/motivation of claim 17 applies.

9.   **Claims 24-27** rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Publication No. 2003/0202469 A1 to *Cain* in view of U.S. Publication No. 2003/0189901

A1 to *Ozugur et al.* (*"Ozugur"*).

As to **claim 24**, *Cain* discloses a method for providing path characterisation information for nodes in a network, said network comprising a plurality of nodes including a provider node, a receiver node, and at least one intermediate node (fig. 1, para. 0031, source 1, destination 4, intermediates 2, 3, 5, QoS parameter), the provider node being arranged to provide data to at least one intermediate node or to the receiver node, an intermediate node being arranged to receive data and to forward data to at least one other intermediate node or to the receiver node, and the receiver node being arranged to receive data from the provider node or from at least one intermediate node (para. 0031-0033, data sent from sender to intermediate to receiver); the method comprising steps of:

assigning an initial condition to a path characterisation metric in the event that said provider node provides data, said path characterisation metric being associated with said data (para. 0031, QoS parameter is requested);

updating the condition of the path characterisation metric in the event that an intermediate node receives said data (para. 0032, intermediate node can update QoS link metric);

determining an eventual condition of the path characterisation metric in the event that said receiver node receives said data (para. 0031-0033, reply RREPQ contains updated QoS link metric);

and establishing if a discrepancy exists between the eventual condition of the path characterisation metric and a predetermined target condition (para. 0033, upon

receiving RREPQ, the source node 1 generates QoS route metrics based upon updated

QoS link metrics);

wherein, in the event that it is established that a discrepancy does exist between

said eventual condition and said predetermined target condition, said method further

comprises steps of:

assigning a different initial condition to a further path characterisation metric in

the event that said provider node subsequently provides further data, said further path

characterisation metric being associated with said further data (para. 0033, upon

receiving RREPQ, the source node 1 generates QoS route metrics based upon updated

QoS link metrics);

Cain does not expressly disclose updating the condition of said further path

characterisation metric in the event that an intermediate node receives said further data;

and making information indicative of said updated condition available to said

intermediate node.

Ozugar discloses after sending out Resv messages, the Upstream Ground Zero

node propagates the new total number of LSPs in Rev messages to the LSPs in the

current congestion set (fig. 5, para. 0042-0045).

Cain and *Ozugar* are analogous art because they are from the same field of

endeavor regarding data processing.

At the time of invention, it would have been obvious to a person of ordinary skill

in the art to incorporate the Resv messages as taught by Ozugar into the invention of

Cain. The suggestion/motivation would have been to inform LSPs of the updated

information (Ozugar, fig. 5, para. 0042-0045).

As to claim 25, *Cain and Ozugar* further disclose a method according to claim 24,

wherein the condition assigned to the path characterisation metric is a value, and the

predetermined target condition is a value (Cain, para. 0031, QoS parameter is based

upon end-to-end delay, end-to-end delay variation, expected path durability, i.e. these

are values, hence both the initial metric (predetermined target condition) and the

updated metric (path characterisation metric) are values). In addition, the same

suggestion/motivation of claim 24 applies.

As to **claim 26**, *Cain* discloses a method for providing path characterisation

information for nodes in a network, said network comprising a plurality of nodes

including a provider node, a receiver node, and at least one intermediate node (fig. 1,

para. 0031, source 1, destination 4, intermediates 2, 3, 5, QoS parameter), the provider

node being arranged to provide data to at least one intermediate node or to the receiver

node, an intermediate node being arranged to receive data and to forward data to at

least one other intermediate node or to the receiver node, and the receiver node being

arranged to receive data from the provider node or from at least one intermediate node

(para. 0031-0033, data sent from sender to intermediate to receiver); the method

comprising steps of:

assigning an initial condition to a path characterisation metric in the event that

said provider node provides data, said path characterisation metric being associated

with said data (para. 0031, QoS parameter is requested);

updating the condition of the path characterisation metric in the event that an

intermediate node receives said data (para. 0032, intermediate node can update QoS

link metric);

determining an eventual condition of the path characterisation metric in the event

that said receiver node receives said data (para. 0031-0033, reply RREPQ contains

updated QoS link metric);

and establishing if a discrepancy exists between the eventual condition of the

path characterisation metric and a predetermined target condition (para. 0033, upon

receiving RREPQ, the source node 1 generates QoS route metrics based upon updated

QoS link metrics);

wherein, in the event that it is established that a discrepancy does exist between

said eventual condition and said predetermined target condition, said method further

comprises steps of:

assigning a different initial condition to a further path characterisation metric in

the event that said provider node subsequently provides further data, said further path

characterisation metric being associated with said further data (para. 0033, upon

receiving RREPQ, the source node 1 generates QoS route metrics based upon updated

QoS link metrics).

and making information relating to the discrepancy between the eventual

condition of a previous path characterization metric and said predetermined target

condition available to said provider node (para. 0033, destination node generates reply

RREPQ to source node 1 including flow identifier and updated QoS link metric for each

discovered route).

Cain does not expressly disclose *updating the condition of said further path*

characterisation metric in the event that an intermediate node receives said further data;

and making information indicative of said updated condition available to said

intermediate node;

and making information relating to the discrepancy between the eventual

condition of a previous path characterization metric and said predetermined target

condition available to said *intermediate node*.

Ozugar discloses after sending out Resv messages, the Upstream Ground Zero

node propagates the new total number of LSPs in Rev messages to the LSPs in the

current congestion set (fig. 5, para. 0042-0045), i.e. the previous Resv messages had a

different number of hops, and this discrepancy is fixed and reported to LSPs in the next

set of Resv messages.

Cain and *Ozugar* are analogous art because they are from the same field of

endeavor regarding data processing.

At the time of invention, it would have been obvious to a person of ordinary skill

in the art to incorporate the Resv messages as taught by Ozugar into the invention of

Cain. The suggestion/motivation would have been to inform LSPs of the updated

information (Ozugar, fig. 5, para. 0042-0045).

As to claim 27, *Cain and Ozugar* further disclose a method according to claim 26,

wherein the condition assigned to the path characterisation metric is a value, and the

predetermined target condition is a value (Cain, para. 0031, QoS parameter is based

upon end-to-end delay, end-to-end delay variation, expected path durability, i.e. these

are values, hence both the initial metric (predetermined target condition) and the

updated metric (path characterisation metric) are values). In addition, the same

suggestion/motivation of claim 26 applies.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to OMAR GHOWRWAL whose telephone number is

(571)270-5691. The examiner can normally be reached on Monday-Thursday, 8:00am-

5:00pm est..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Derrick Ferris can be reached on (571)272-3123. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/O. G./
Examiner, Art Unit 2416

/Derrick W Ferris/
Supervisory Patent Examiner, Art Unit 2416